~~What is claimed is:~~

1. The rotary actuator having a permanently magnetized rotor (7) and a plurality of stator windings (1, 2, 3) surrounding the rotor (7) in a rim-like fashion for generating magnetic fields (B_1, B_{21}, B_{23}, B_3), which place the rotor (7) in one of a first plurality of positions, wherein it has available to it means (11, 12, 13, 14) for exerting a corrective torque on the rotor (7), the means, in the currentless state of the stator windings (1, 2, 3), placing the rotor in a target position of a second plurality of positions (Z_1, Z_2, Z_3), each position of the first plurality having assigned to it a target position.

2. The rotary actuator as recited in Claim 1,
wherein the rotor (7) includes a magnet that is aligned so as to be perpendicular to the rotational axis (6).

3. The rotary actuator as recited in Claim 1 or 2,
wherein the stator windings (1, 2, 3) are arranged so as to be unpaired.

4. The rotary actuator as recited in one of the preceding claims,
wherein the stator windings (1, 2, 3) are uniformly distributed around the axis (6) in the circumferential direction.

5. The rotary actuator as recited in one of the preceding claims,
wherein the stator windings (1, 2, 3) are arranged on a ring core (5) that surrounds the rotor (7).

6. The rotary actuator as recited in one of the preceding claims,
wherein the number of stator windings (1, 2, 3) is smaller than the number of first positions.

7. The rotary actuator as recited in one of the preceding claims,
wherein the means for exerting a corrective torque (11, 12, 13, 14) are permanent magnets.

8. The rotary actuator as recited in one of the preceding claims,
characterized by a network having n inputs (20_1,... 20_4) and m outputs (21_1, 21_2, 21_3), n being the number of the first positions and m being the number of stator windings (1, 2, 3) and each stator winding (1, 2, 3) being connected to one output (21_1, 21_2, 21_3), the network distributing to the stator windings (1, 2, 3) a current applied at one of inputs (20_1,... 20_4), in order to set a first position that is assigned to the respective input.

9. The rotary actuator as recited in Claim 8,
wherein the resistance of all n inputs (20_1, ... 20_4) is the same.

10. The rotary actuator as recited in one of preceding claims,
wherein it has three stator windings (1, 2, 3) and four first positions.

11. The rotary actuator as recited in Claim 10,
wherein adjoining target positions (Z_1,... Z_4) have an angular distance of 45°.

12. A rotary switch, characterized by a rotary actuator in accordance with one of the preceding claims.

13. The rotary switch as recited in Claim 12,
wherein it is an "R"-type waveguide switch.